INFECTIOUS THIS IS

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Infectious diseases

Infectious diseases are caused by pathogenic microorganisms, such as bacteria, viruses, fungi and parasites [1]. Infectious agents can be widely distributed or be endemic, nevertheless, due to globalization the propagation of these microorganisms has been facilitated worldwide [2].

***Infectious This Is* is a board game (Fig. 1) which offers the possibility to divulge scientifically the importance and problems of infectious diseases in a rapid, easy and enjoyable way**.

Areas of application

Infectious This Is is a board game created and developed for the whole public, it is as much for people with scientific knowledge as it is for neophytes in this area, but who have a certain motivation and curiosity for the subject. Furthermore, this board game offers the possibility of playing in a teaching environment. It is also possible to play in a familiar environment or with friends. In any case, *Infectious This Is* is a valid, entertaining and instructive tool for all those who need or feel motivated to deepen their knowledge of infectious diseases.

Social, educational or informational interest

The main interest is to divulge to general population the importance of infectious diseases and how many of these could be combatted with an appropriate treatment. By introducing society to this area of knowledge it is possible to increase the awareness of infectious diseases and their causal agents. In this way, the concern relating to infectious diseases acquires a relevance for the general population due to its effects in addition to possible implications in politics, economics and socials.

Expected improvements

This board game aims to improve all players' scientific knowledge of infectious diseases. A way to verify the acquirement knowledge by playing the board game is with surveys before and after playing. This will be a good tool in educational settings because teachers will have an effective and different tool to evaluate their students. In addition, the game provides the possibility of introducing changes in people's behaviours in order to prevent infectious diseases and contribute to mitigating their effects.

GAME ENGINE

1 Instructions

The game is designed to play: 2 - 6 · 30' - 60' · +16

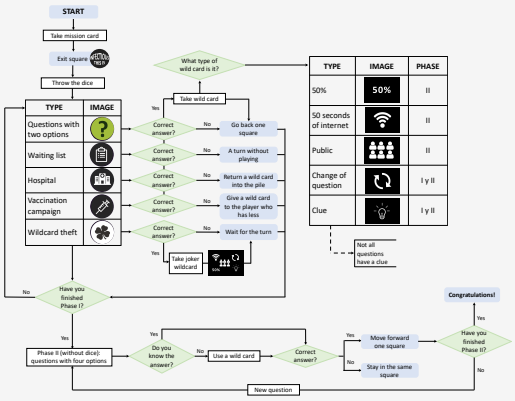

Figure 2. Flowchart about the game instructions.

2 Before playing

The first step before starting the game is to choose a pawn (Fig. 3) and place it in the exit square. Afterward, all players must take a mission card which will define the colour of the final aim (Fig. 4). For example, a player has a mission card with the following problem:

> *You have been commissioned to conduct a study on chimpanzees in the Nouabalé-Ndoki National Park in the Republic of the Congo, with the possible risk of contracting the Ebola virus* [3].

Therefore, the player must go to the international travel station that corresponds to the blue colour (Fig. 4).

Figure 3. The six pawns.

Figure 4. Mission card. On the left is the front of the card and on the right is the back.

3 Phase I

The youngest player starts throwing the dice (Fig. 5) going through the questions squares. In that moment, Phase I has just began.

When a player arrives to a question square, the opponent of his right takes an interrogation card (Fig. 6) and reads the question with the two options. The player will give an answer, if the answer is correct the player can take a wild card from the pile. If on the contrary, the answer is incorrect the player will not have a wild card and he might go back one square.

An interrogation card is shown below with an example of question with the answer options:

Figure 5. Dice.

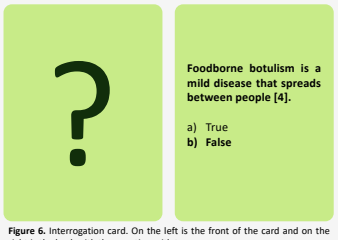

Figure 6. Interrogation card. On the left is the front of the card and on the right is the back with the question with two answers.

4 Phase II

When the player throws the dice and arrives at the colour of their mission the question they have to answer has four options (Fig. 7). In this case for every correct answer the player will not take a wild card but will move forward one square. If the answer is not correct the pawn has to stay on the same square. Thus, the dice is no longer used.

Here is the moment to use the wild cards that every player has been collecting during the first phase.

The player who arrives first to the last square, stipulated with a star, has reached their final aim and hence is the winner.

Below is an example of a question with four answers:

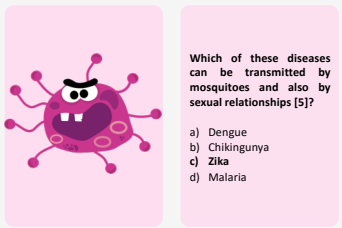

Figure 7. Phase II cards. On the left is the front of the card and on the right is the back with the question with four answers.

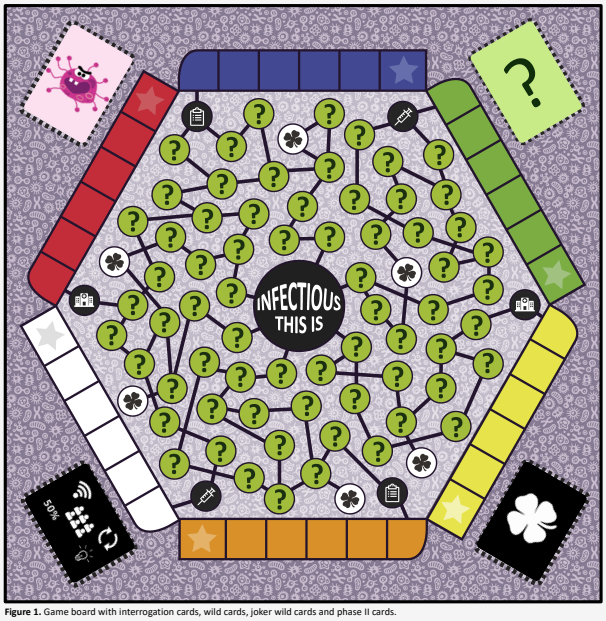

Figure 1. Game board with interrogation cards, wild cards, joker wild cards and phase II cards.

TYPES OF SQUARES

In the Phase I there is five different squares. In all the squares the player answers a question with two options but according to the square it will be a positive or negative consequence.

The meaning of each one is explained below:

Question with two options: This is the normal square which is explained before. Every correct answer means that the player takes a wild card.

Wildcard theft: This square has a white background, so if the answer of the question is correct, the player will take the joker wild card.

Waiting list: In this square, as the background is black if the answer of the question with two options is not correct the player will miss a turn.

Hospital: With this square with black background an incorrect answer means that the player has to return a wild card to the pile.

Vaccination campaign: In this black background square with an incorrect answer the player must give a wild card to the player who has less wildcards to guarantee their immunization.

TYPES OF WILD CARDS

Figure 8. Front of wild cards.

Figure 9. Joker wild card.

After every correct answer in Phase I the player must take a wild card (Fig. 8). There are six types of wild cards and each of them has a different use. Below there is the classification according to the phase which can be used:

Phase I & II (Fig. 10)

- **Change of question**: gives the possibility to change the question for another.
- **Clue**: help to answer the question. Not all questions have a clue. If the question have one it is necessary to tell it.

Phase II (Fig. 11)

- **50%:** the player who reads the question discards two incorrect options.
- **50 seconds of internet:** surf the Internet during 50 seconds, timing by another player.
- **Public**: the rest of the players are consulted which seems to be the correct answer. Whoever reads the question should remain in silence.

There is another wild card, the joker (Fig. 9), which is not on the pile with the others, but is obtained when the player is on the clover square and gives a correct answer.

- **Joker:** this card lets you choose any other choice of wild card, however this can only be played once.

Figure 10. On the left is the back of change of question wild card and on the right is the back of clue wild card.

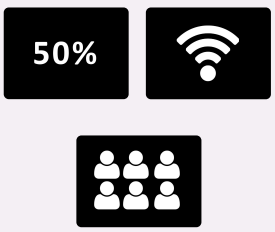

Figure 11. Up to the left the back of 50%,, up to the right the back of 50 seconds of internet and down the public wild card.

References:
[1] WHO (2017). *Infectious diseases*. [Accessed: May 2018]. Available at: http://www.who.int/topics/infectious_diseases/en/ **[2]** Ryan, K.J., Ray, G.C, Ahmad, N. & et al. (2011) *Sherris - Microbiología médica*. 5th edition. New York: McGrawHill. **[3]** CDC (2017). *Ebola - Disease Directory - Travelers' Health*. [Accessed: February 2018] Available at: https://wwwnc.cdc.gov/travel/diseases/ebola. **[4]** WHO (2018) *Botulism*. [Accessed: April 2018]. Available at: http://www.who.int/news-room/fact-sheets/detail/botulism. **[5]** CDC (2018). *Zika virus – Transmission.* [Accessed: February 2018]. Available at: https://www.cdc.gov/zika/transmission/index.html.